

## CLAIMS:

1. A method of charging a rechargeable unit, such as a rechargeable battery or a rechargeable battery pack, characterized in:

- that the rechargeable unit is connected to a supply unit;
- that the supply unit supplies a current to the rechargeable unit;
- 5 - that the charging voltage is monitored during charging;
- that the initial current supplied to the rechargeable unit at the start of the charging process is such that the charging voltage almost immediately reaches a predetermined maximum charging voltage; and
- that subsequently the current is decreased in such a way that the charging 10 voltage is kept substantially constant at the maximum charging voltage during the charging process.

2. A method according to claim 1, wherein the initial charging current is such that the charging voltage reaches the predetermined maximum charging voltage within 2 15 minutes at most.

3. A method according to claim 1, wherein the initial charging current corresponds to more than 1 C-rate.

20 4. A method according to any one of claims 1-3, wherein the rechargeable unit is charged to maximally 75% of its maximum capacity, the charging process then being interrupted.

25 5. A method according to any one of the preceding claims, wherein the initial depth of charge of the rechargeable unit to be charged is measured before charging starts or at the beginning of the charging process, charging being stopped if the rechargeable unit is found to have an initial depth of charge which is higher than a predetermined maximum initial depth of charge.

6. A method according to any one of the preceding claims, wherein the rechargeable unit comprises a lithium battery.

7. A charger for charging a rechargeable unit, such as a rechargeable battery or a  
5 rechargeable battery pack, comprises:

- a supply unit for supplying charging current to a rechargeable unit;
  - terminals for connecting the supply unit to the rechargeable unit; and
  - a control unit for controlling the current supplied by the supply unit,
- characterized in that the charger further comprises:

- 10 - means for monitoring the charging voltage;  
- means for supplying an initial charging current at the start of the charging process of a rechargeable unit, the initial charging current being such that the charging voltage supplied to the rechargeable unit almost immediately reaches a predetermined maximum charging voltage; and
- 15 - means for decreasing the current in such a way that the charging voltage is kept substantially constant at the maximum charging voltage during the charging process.

8. A charger according to claim 7, wherein the control unit comprises a selector for choosing between:

- 20 - a boost charging mode wherein the control unit is adapted to make the supply unit supply an initial current at the start of the charging process of a rechargeable unit, the initial charging current being such that the charging voltage supplied to the rechargeable unit almost immediately reaches a predetermined maximum voltage; and
- a normal charging mode wherein the control unit is adapted to make the supply unit supply a constant charging current at the start of the charging process of a rechargeable unit, the constant charging current being such that the rechargeable unit is charged with a substantial capacity at said constant current before the charging voltage reaches a predetermined maximum voltage.
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- 30 9. A charger according to claim 7 or 8, wherein the control unit comprises means for measuring the depth of charge of the rechargeable unit during charging and means for interrupting the charging procedure at a predetermined depth of charge.

10. A charger according to any of claims 7-9, wherein the charger comprises a timer function for interrupting the charging process after a predetermined time interval.